

REMARKS

Entry of the foregoing, reexamination and further and favorable reconsideration of the subject application in light of the following remarks, pursuant to and consistent with 37 C.F.R. § 1.112, are respectfully requested.

The Office Action Summary correctly indicates that claims 20-32 were pending in the application. Claims 20-32 were subject to a restriction requirement. Claims 20, 23 and 28-31 have been withdrawn from consideration. Claims 21, 22, 24-27 and 32 have been considered and rejected.

Claims 21, 22, 24, 25 and 32 have been amended. Claim 33 has been added.

Claim 21 has been rewritten in independent form incorporating the language of claim 20, from which it depended and has been further amended to refer to the sequence of the Bt14 protein set forth in SED ID NO 10, which is described on page 28 of the specification.

Claims 22 and 24-25 have been amended to correct errors of form. Claim 32 has been amended to recite that growing the recited plant or seed accomplishes the purpose set forth in the preamble, to delete the recitation of "plant cell" and to correct the dependence.

Claim 33 is added. Support for claim 33 can be found throughout the specification, for example on pages 54-55.

By the present amendment, a replacement paper copy of the Sequence Listing is substituted for the previous copy of the sequence listing. It has come to our attention that in copying the paper copy of the sequence listing from the last filed sequence listing in the parent application, a page containing the end of SEQ ID NO:9 and the beginning of SEQ ID NO:10 may have been inadvertently omitted from the copy filed with the present application. The sequence listing provided herewith includes all of the sequences presented in the parent application. This amendment could not be considered new matter since the content of SEQ

ID NOS:9 and 10 is described on page 28, lines 3-16, where the specification points out precise differences between the DNA and protein sequences of Bt14 described in SEQ ID NOS:9 and 10 and a previously published sequence of a similar gene.

The abstract and the title have been amended to reflect the currently claimed invention. Support for these amendments can be found throughout the specification.

No prohibited new matter has been introduced by way of the above amendments. Applicants reserve the right to file a continuation or divisional application on subject matter canceled by way of this Amendment.

Formal matters

The abstract and the title have been objected to as not descriptive of the claimed invention. By the present amendment, the title has been amended to reflect the presently claimed invention. Furthermore, a sentence has been added to the Abstract of the disclosure that reflects teachings in the disclosure that relate to the presently claimed invention.

Withdrawal of the objection is respectfully requested.

Rejections under 35 U.S.C. § 112

Enablement

Claim 32 has been rejected under 35 U.S.C. § 112, first paragraph, as allegedly not enabled with respect to growing plant cells transformed with a nucleic acid encoding Bt14 endotoxin. The Office has acknowledged that the specification is “enabling for a method of controlling insects comprising growing plants or seeds transformed with a nucleic acid encoding Bt14 endotoxin.” However, the Office has alleged that growing plant cells has no real world use.

Applicants respectfully submit that a person of ordinary skill can grow plants, seeds or cells as claimed. Transformed plant cells can be used to make transformed plants, or can be grown to produce the insecticidal protein, and protect the plant cells against insects, or for applying the protein so produced in an insecticidal spray. Therefore, a method comprising growing plant cells as recited clearly has real world use.

Accordingly, applicants do not accede to the alleged rejection. Nevertheless, the recitation of cells has been stricken from claim 32, rendering the rejection moot. New claim 33 recites growing plants, seeds, or cells. However, it is respectfully submitted that the rejection is not applicable to claim 33, for at least the reasons given above.

Definiteness

Claims 21-22, 24-25 and 32 stand rejected under 35 U.S.C. § 112 as allegedly indefinite.

Claim 21 was rejected for being dependent on a non-elected claim. Claim 21 has been rewritten in independent form.

Claim 21 was rejected for reciting "protein fragment of claim 20." The rejection does not apply to claim 21 as amended.

Claim 22 was rejected for allegedly lacking antecedent basis for "the TTG start codon." It is noted that the sequence coding for Bt14 shown in SEQ ID NO:9 includes a "TTG" first codon. Claim 21 has been amended to recite "a" TTG start codon which is more formally correct.

Claims 24 and 25 were rejected for allegedly lacking antecedent basis for the limitation "the DNA of" claims 21 and 22. Claims 21 and 22 have been amended to recite "An isolated DNA comprising a sequence . . ." rather than "an isolated DNA sequence." Therefore, the antecedent basis claims 24 and 25 is correct.

Claim 32 was rejected for lacking antecedent basis for the plant, seed, or plant cell of claim 25." Claim 32 has been amended to correct its dependency so that antecedent basis is properly provided.

Claim 32 was also rejected, because it is further alleged that methods must be circular, that is the method must conclude with a recitation of having accomplished its purpose. The Examiner is requested to provide a citation to the specific section of the Manual of Patent Examination Procedure or case law authority that provides for a rejection on this basis.

Where as here, the performance of the recited steps of the method is sufficient to accomplish the recited purpose of the method, and a person of ordinary skill in the art could recognize this from reading the specification, the claim is not indefinite if it does not explicitly state that which is inherent. A person of ordinary skill in the art would appreciate the metes and bounds of the claim as previously presented.

Nevertheless, claim 32 has been amended to recite that the insects are controlled by the step of growing the recited plant or seed.

For at least the foregoing reasons, withdrawal of the rejections of claims 21-22, 24-25 and 32 under 35 U.S.C. § 112, second paragraph.

Rejections under 35 U.S.C. § 102

A. Brizzard

Claim 21 stands rejected under 35 U.S.C. § 102 as allegedly anticipated by Brizzard et al. (1988, Nucleic Acids Res., 16:4168-69). The rejection is respectfully traversed.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir.

1987). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Claim 21 has been amended to recite An isolated DNA comprising a sequence encoding a protein comprising the amino acid sequence of the Bt14 protein set forth in SEQ ID NO:10, or an insecticidally effective fragment thereof. As indicated on page 28 of the specification, the Bt14 protein of the present disclosure is not the same as the Brizzard and Whiteley sequence. There is a difference in the amino acid sequence, and it was not known if this change would have allowed for toxicity of this different protein. Therefore, the presently claimed Bt14 invention is neither anticipated by nor obvious over Brizzard.

B. Rangan

Claims 21, 24 and 26 have been rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Rangan (U.S. Patent Number 5,244,802). The rejection is respectfully traversed.

The Rangan patent does not disclose the Bt14 sequence. This patent shows the DNA sequence of the Bt protoxin sequence used to make the "PBR322/bt14" plasmid in Formula I. Following the cloning steps of Example 14, it is clear that a part of this Formula I sequence is cloned in a plasmid background to create the "PBR322/bt14" plasmid. This cloned Bt protoxin sequence is from nucleotide position 155 to nucleotide position 3773 in the Formula I sequence (see col. 17 and 18 in Rangan et al.). An alignment of this Rangan Formula I coding sequence with the Bt14 sequence of the invention SEQ ID NO:9 is attached as Exhibit A. The alignment shows substantial differences, including gaps, proving that the DNA and amino acid homology between the encoded proteins is quite low (52 % at amino acid sequence level, 61 at DNA level). Clearly, Rangan does not disclose the Bt14 sequence

claimed. Therefore, the presently claimed Bt14 invention is neither anticipated by nor obvious over Rangan.

Rejections for alleged obviousness-type double patenting

Claims 21-22, 24-27 and 32 have been rejected under the judicially created doctrine of obviousness-type double patenting for allegedly being unpatentable over claims 4 and 22 of U.S. Patent Number 6,172,281, claims 14-15 of U.S. Patent Number 5,866,784, and claims 1-10 of U.S. Patent Number 6,855,873.

Without agreeing to any allegation of obviousness, but simply in order to expedite prosecution, a terminal disclaimer is submitted herewith, rendering the rejections moot.

CONCLUSION

In view of the foregoing, examination on the merits and favorable action in the form of a Notice of Allowance is believed to be next in order. Such action is earnestly solicited.

In the event that there are any questions relating to this Amendment and Reply or the application, it would be appreciated if the Examiner would telephone the undersigned attorney concerning such questions so that prosecution of this application may be expedited.

The Director is hereby authorized to charge any appropriate fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL PC

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